WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2005NY72B

Title: Demonstration assessment of innovative water quality protection options for Cayuga Lake: Fall Creek and Cornell campus

Project Type: Research

Focus Categories: Non Point Pollution, Nutrients, Sediments

Keywords: Baseline data, storm water pollution, cost/benefit analysis, BMPs

Start Date: 03/01/2005

End Date: 02/28/2006

Federal Funds: $0

Non-Federal Matching Funds: $28,266

Congressional District: 22

Principal Investigator:
Michael Todd Walter

Abstract

The southern end of Cayuga Lake is currently listed on the "303d" list as impaired for silt/sediment and phosphorus by the New York State Department of Environmental Conservation (NYSDEC). The need for research at the sub-watershed level for Cayuga Lake is widely recognized and the Genesee/Finger Lakes Regional Planning Council (GFLRPC) formally reinforced this need in its 2000 report "The Cayuga Lake Watershed Preliminary Watershed Characterization." In addition, the Ithaca area is now classified as a Municipal Separate Storm Sewer Systems (MS4) under the EPA's Phase 2 Storm water Regulations and must develop, implement and enforce a storm water management program to reduce the discharge of pollutants to the maximum extent practicable in order to protect water quality. This research will assist municipalities and local agencies to better understand sub-watershed impacts and the potential water quality improvements associated with both onsite and novel watershed-level strategies. Using the Fall Creek watershed as a microcosm of the entire South-end of Cayuga Lake drainage, this project will provide information about current and historical loads in Fall Creek, runoff pollutant loads from developed areas (specifically Cornell's campus), and a comparison of potential costs and benefits from onsite stormwater control and various in-stream controls such as altered management strategies for existing impoundments (specifically Beebe

Lake) and structural alterations to natural promote flood pulse processes, i.e., redistribute contaminants over undeveloped flood plains. Benefits include filling data gaps identified by the GLRPC, such as baseline characterization of water quality and loading, seasonal sampling, event sampling and effectiveness of mitigating measures (Best Management Practices) in reducing export of sediment and nutrients from sub-watersheds. The results of the research will include cost/benefit analysis of potential enhancements to the lake to improve water quality and provide a scientifically defensible basis and management framework for making decisions regarding pollutant-trading or other incentives.